

## S P E C I F I C A T I O N

### DEVICE AND METHOD FOR SECURING ROLLED PAPER MEDIA

#### BACKGROUND OF THE INVENTION

##### 1. Field of the Invention

**[0001]** The field of the present invention is securing devices and methods, particularly devices and methods for securing rolled paper media.

##### 2. Background

**[0002]** Rolled paper media finds many uses throughout the home, among other places. Some of the most common forms of rolled paper media found in the home are toilet paper and paper towels. Both types of paper products are generally sold in the roll format because of its convenience for packaging, storage, and use.

**[0003]** The variation in the size and form of toilet paper products sold for residential use is limited. For example, such toilet paper products are typically manufactured with 1- or 2-ply of tissue paper which is divided by perforations into sheets measuring approximately 4.5" wide by 4.4"-4.5" long. Rolls of toilet paper typically include at least 200 of these sheets wrapped around a core having a diameter of approximately 1.5" or more. As sold and unused, the smallest roll of toilet paper therefore typically has a diameter of at least 3", a width of approximately 4.5", and includes more than 880 linear inches of paper product wrapped about the core. Toilet paper products sold for commercial use tend to be larger and may have different form factors to accommodate the greater variety found in commercial dispensers.

**[0004]** The variation in the size and form of paper towel products sold for residential use is also limited. For example, such paper towel products are typically manufactured with 1- or 2-ply of paper which is divided by perforations into sheets

measuring approximately 11" wide by 7"-11" long, all wrapped around a core having a diameter of approximately 1.5" or more. Typically, rolls having longer sheets have fewer total sheets and rolls having shorter sheets have a greater number of total sheets. The typical roll having 11" long sheets may have as few as 60 total sheets, whereas the typical roll having 7" long sheets may have 100 or more sheets. As sold and unused, the smallest paper towel roll therefore typically has a diameter of at least 4.5", a width of approximately 11", and includes more than 660" linear inches of paper product wrapped about the core. As with toilet paper products, paper towel products sold for commercial use may have different form factors to accommodate the greater variety found in commercial dispensers.

**[0005]** For both toilet paper products and paper towel products, dispensers in the home tend to include a rod which is inserted through the core of the roll and affixed to a supporting structure. Such simple dispensers do not include any mechanism for securing the paper product on the roll to prevent dispensation. For example, children or pets often play with toilet paper by unwinding the paper as it sits on the dispenser, thereby wasting the paper. As another example, paper products kept on dispensers in motor homes are subject to vibrations which occur when the vehicle is in motion. Such vibrations can cause the paper to unwind from the roll, also wasting the paper.

## SUMMARY OF THE INVENTION

**[0006]** The present invention is directed towards a device and method for securing rolled paper media. The device comprises opposing clamp members which are hingedly joined and biased toward a closed position. Each opposing clamp member includes a curved inner surface, and the combination of the two inner surfaces is extendable around more than one-half an unused standard paper media roll. Each curved inner surface may be arcuate. Each opposing clamp member may include one or more fingers, and the fingers of one clamp member may be positioned to interdigitate

with the fingers of the opposing clamp member when the clamp members are in the closed position. Each clamp member may also include a handle, the handles being used to leverage the opposing clamp members into the open position.

**[0007]** The method comprises hingedly biasing a first curved surface toward a second curved surface, then placing a paper media roll between the two curved surfaces. Optionally, the curved surfaces may be arcuate surfaces and have a radius that is at least as large as the radius of an unused standard paper media roll. The curved surfaces may each include one or more fingers, and the fingers of one curved surface may be positioned to interdigitate with the fingers of the other curved surface when the curved surfaces are in the closed position.

**[0008]** Accordingly, it is an object of the present invention to provide an improved device and method for securing rolled paper media. Other objects and advantages will appear hereinafter.

#### BRIEF DESCRIPTION OF THE DRAWINGS

**[0009]** In the drawings, wherein like reference numerals refer to similar components:

Fig. 1 is a side view of a device for securing rolled paper media as shown in place about a paper media roll;

Fig. 2 is a side view of the device as seen from the left side of Fig. 1;

Fig. 3 is a side view of the device as seen from the right side of Fig. 1;

Fig. 4 is a side view of a device for securing rolled paper media as shown in place about the empty core of a paper media roll; and

Fig. 5 is a side view of the device as seen from the left side of Fig. 4.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

**[0010]** Turning in detail to the drawings, Fig. 1 illustrates a clamping device 10 secured to an unused standard paper media roll 12. The paper media 14 is wound about a core 16. The outer radius of the core,  $r$ , for toilet paper and paper towel rolls is typically 1.5" or more. The outer radius of the paper media roll,  $R$ , may vary, but is characterizable as having at least a minimum dimension based upon standards established through continued use in the industry of toilet paper and paper towel products. For toilet paper, the smallest dimensioned rolls are the 1-ply rolls. Typically, the smallest of the 1-ply rolls includes no less than 200 sheets to the roll, the sheets being separated by perforations and each sheet being at least 4.4" in length. The smallest of such 1-ply toilet paper rolls, when new and unused, has an outer radius,  $R$ , of at least 3". For paper towels, the smallest dimensioned rolls generally include about 90 1-ply sheets or 60 2-ply sheets, the sheets being separated by perforations and each sheet being approximately 9" or more in length. The smallest of such paper towel rolls, when new and unused, has an outer radius,  $R$ , of at least 4.5".

**[0011]** The device 10 comprises two opposing clamp members 20, 22. The clamp members 20, 22 each include a handle 24, 26 and a clamp arm 28, 30. Each clamp arm 28, 30 may include one or more fingers (not shown in Fig. 1) and has an inner arcuate surface 32, 34. The inner arcuate surfaces 32, 34 are defined by a radius that is at least as large as the outer radius,  $R$ , of the media roll 12. Further, each inner arcuate surface 32, 34 is smooth to prevent tearing damage to the paper media when the device 10 is secured to or removed from the media roll 12. The clamp arms 28, 30 extend less than halfway around the media roll 12. The inner arcuate surfaces 32, 34 therefore have an arc length of less than 180°.

**[0012]** Each handle 24, 26 includes a set of connecting arms 36, 38 (only one connecting arm of each set is visible in Fig. 1). The connecting arms 36, 38 of each

handle 24, 26 extend toward the opposite handle and are connected to a hinge pin 40. A hinge spring (shown in Fig. 3) is wound about the hinge 40 pin and employed to bias the clamp members 20, 22 toward the closed position so that the media roll 12 may be secured therebetween. With the handles thusly connected, pressure may be applied to each handle 24, 26 to leverage the clamp members 20, 22 into the open position and place or remove the device 10 from a paper media roll.

**[0013]** Fig. 2 shows the two fingers 42 of the upper clamp arm 28 and the single finger 44 of the bottom clamp arm 30. The upper fingers 42 are spaced apart by a distance that is greater than the width of the bottom finger 44. This spacing allows the upper and bottom fingers to interdigitate as shown in Figs. 4 and 5, in which the clamp is shown secured to the core 16 of an exhausted media roll. Depending upon the radius of the inner arcuate surfaces and the radius of the media roll about which the device is secured, the fingers may interdigitate when the device is secured about non-exhausted media rolls.

**[0014]** Fig. 3 shows the hinge spring 46 wound about the hinge 40. The hinge spring includes two spring arms 48, 50. The first spring arm 48 bears against the upper handle 24, and the second spring arm 50 bears against the bottom handle 26. The spring arms 48, 50 apply pressure against each respective handle 24, 26 to bias the clamp members 20, 22 toward the closed position.

**[0015]** Thus, a device for securing a paper media roll is disclosed. While embodiments of this invention have been shown and described, it will be apparent to those skilled in the art that many more modifications are possible without departing from the inventive concepts herein. The invention, therefore, is not to be restricted except in the spirit of the following claims.